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THE ROLE OF THE VETERINARIAN
IN NATIONAL DISASTER

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
Washington, D. C.

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THE ROLE OF THE VETERINARIAN IN NATIONAL DISASTER

Contract No. OCD-OS-63-65

Subtask 2421D

prepared by

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service
Division of Health Mobilization

under contract with

OFFICE OF CIVIL DEFENSE, DEPARTMENT OF THE ARMY

July 1964

OCD Review Notice

This report has been reviewed in the Office of Civil Defense and approved for publication. Approval does not signify that the report necessarily reflects views and policies of the Office of Civil Defense.

ABSTRACT

This report on "The Role of the Veterinarian in National Disaster" was prepared for the Division of Health Mobilization by the Veterinary Public Health Section of the Communicable Disease Center.

Following a disaster, veterinarians will continue in those activities that relate most directly to human welfare. Public health activities will become more important. A major public health responsibility of veterinarians will be to conserve animal sources of human food to insure a continuing food supply for the surviving population. Veterinarians, when necessary, will assume responsibility for providing medical care to populations located in shelters or in other locations during the immediate post attack period. In the event that numbers of human sick and injured are too great to be cared for by the available physicians, veterinarians will provide care, limited by their individual abilities and the needs of the population. Para-veterinary personnel will continue in many of their usual activities, such as food inspection, while others may be utilized as nurse substitutes, etc.

Teaching in disaster veterinary medicine is needed to better prepare veterinarians for these new and expanded roles. It is believed that the best way to provide disaster preparedness for veterinarians will be to incorporate it as part of existing academic programs. Studies are needed to define the teaching needs, both in subject matter and in methods of presentation.

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THE ROLE OF THE VETERINARIAN IN NATIONAL DISASTER

I. Introduction

This report was prepared as the result of an agreement between the Communicable Disease Center and the Division of Health Mobilization entered into July 1, 1963, to explore the role of veterinarians in the post disaster period. It contains recommendations for accomplishing preparedness in these roles--determining the training needed and evaluating the capabilities of the profession to provide this training. This report was prepared by the Veterinary Public Health Section, Communicable Disease Center, Public Health Service, U.S. Department of Health, Education and Welfare, Atlanta, Georgia, with the guidance and concurrence of a study group of veterinarians representing veterinary practitioners, the American Veterinary Medical Association, the American Animal Hospital Association, Military veterinarians, and veterinarians of the U.S. Department of Agriculture, who met in Washington in September 1963. More than 100 letters were sent to veterinarians in many specialty areas and in all parts of the United States, requesting guidance from them in defining "The Role of the Veterinarian in National Disaster."

On April 8, 1964, the Deans, or their representatives, from 17 of the schools of veterinary medicine met at the Communicable Disease Center in Atlanta, Georgia to review this report. Special emphasis was placed on the current training capabilities of the profession, on what training would be required to assure proficiency in disaster veterinary medicine, and on when this training should be given to be most effective. The conclusions of this meeting have been incorporated in this report.

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II. Objectives and Method of Approach to Study

According to terms of the agreement between the Veterinary Public Health Section of the Communicable Disease Center and the Division of Health Mobilization, the purpose of this study is to identify and define the potential capabilities and functional roles of veterinarians for the provision of health and medical care to the sick and injured of the surviving population in the post disaster period. The primary objective of the study is to determine the role within the veterinary discipline in regard to:

- (1) Expanded functions of veterinarians;
- (2) Additional functions of veterinarians;
- (3) Additional functions common to veterinarians, dentists and pharmacists;
- (4) Recommendations for the utilization of veterinary assistants;

- (5) Relationship to the medical profession's over-all emergency medical care program;
- (6) Recommendations for accomplishing preparedness in these expanded roles; and
- (7) Identification of current professional training capabilities and functions for each discipline within the health and medical service field.

Before taking up expanded and additional functions of veterinarians and the use of veterinary assistants in the post disaster period, it is advisable to define and discuss the term "disaster" as it will be used in this report.

A "disaster" is a calamity, misfortune, or a serious event or accident, and, for our use, may be either local, regional, or national in scope and may be caused by nature or accidentally or deliberately induced by man, such as an act of war.

It is possible to plan with greater confidence for natural disasters than manmade disasters. Mankind has always experienced natural disasters; there is a fund of common knowledge about the probable extent of the disaster, the expected duration of the disaster, and of actions necessary to ensure survival. In the past, veterinarians have served their communities by providing disaster medical care following floods, hurricanes, and earthquakes. Most veterinarians now stand ready to provide similar care, without additional training, to victims of natural disasters. This knowledge will be helpful following manmade disasters, but supplemental training will be required in special areas such as radiation injuries and long-term care of human patients. Survival techniques developed from experience gained following the use of atomic bombs in World War II must be reevaluated, using the present knowledge of modern weapon capabilities. These capabilities prescribe specific limitations to our survival activities and later in the report will be briefly discussed as they affect the role of the veterinarian in a post disaster period.

The "usual" functions of veterinarians, as they relate to disaster medicine, are not easy to define because, in addition to basic veterinary training, many veterinarians have acquired skills in specialized fields of practice. These skills will enable them to perform better in some capacities

in the post disaster period than in others. For this reason, it is not felt desirable to attempt to define specific roles for all veterinarians, but rather to establish general guidelines in which the entire profession can work.

It is the opinion of the study group that the portion of the "Report on National Emergency Medical Care," of the American Medical Association, describing activities of veterinarians, is overly restrictive. A situation that requires veterinarians to act as physicians will impose its own limitations, subject to the judgment of each individual veterinarian as to what is proper and necessary under the existing circumstances and subject to his own assessment of his medical capabilities. Proper activities might be much less than, or far in excess of, those prescribed in the AMA report.

III. Summary and Conclusions

Laws must be passed, in those states which have none, to protect persons acting as physician substitutes in disaster situations and those giving and receiving training in disaster medicine. Until such acts are passed, persons acting in these capacities do so with an accompanying risk of legal prosecution.

In the event of a disaster, veterinarians will be expected to undertake the following activities:

Take appropriate action to safeguard their own lives and those of their families. These actions may be to take shelter or to engage in community activities necessary for the immediate preservation of life and property.

Following the immediate disaster period, to determine how they can be of greatest service. This decision will be based on the immediate needs of the community, special skills of each veterinarian, available supplies,

previous planning, available physicians, transportation, etc. In the absence of sufficient numbers of physicians to provide medical care to large numbers of sick and injured, veterinarians will have to assume that responsibility.

Expand usual activities of animal health care to husband sources of foods of animal origin and to assure that foods provided the surviving populations are safe for consumption.
This will probably be the most important contribution the profession can make to national survival in the event of a major disaster.

Protect the community health by maintaining surveillance of communicable diseases in the surviving population and by application of epidemiological methods, now used in veterinary medicine, to define and eliminate or control sources of infection in the human population.

Lay assistants to veterinarians should be utilized in areas in which they are most competent; lay meat inspectors in supervising field slaughter of animals, small animal hospital assistants as nurses aids, etc.

Preparedness for the profession's new and expanded roles in the post disaster period should begin in the veterinary colleges at the undergraduate level. It is believed that it will be more difficult to reach veterinary practitioners with training programs. Subjects to be taught in disaster veterinary medicine and methods for presenting them should be evaluated in pilot or demonstration projects.

Veterinarians constitute a reservoir of medical care and public health resources for the community that can and should be utilized in disaster situations when the usual facilities for providing these services are disrupted or overwhelmed. Many of their usual activities will continue without change; other new or expanded responsibilities will be required of them. Some of these responsibilities will require additional training to ensure competency.

IV. Professional Profile

Veterinarians are persons skilled in treating diseases and injuries of animals. In the United States, at least two years of pre-veterinary study at the college level and four years of veterinary education at an approved college are required before a Doctorate in Veterinary Medicine is granted. Veterinary curriculums include courses in anatomy, bacteriology, pharmacology, physiology, surgery, medicine, etc., that have comparative application to man as a member of the animal kingdom.

The basic professional activity of veterinarians is to maintain the health of domestic animals. This is accomplished by the practice of preventive veterinary medicine, medical and surgical care of sick and injured animals, and by regulatory activities designed to prevent introduction of disease producing agents into the country or to contain and eradicate infection present in the animal populations. Related activities of veterinarians are designed to protect human health; food inspection, milk and dairy inspection, as well as activities in specific areas that require special competencies in epidemiology, radiation studies, air pollution control, and public health administration. Veterinarians are now active in many positions that have direct application in human medicine. Among these are laboratory diagnosticians, bacteriologists, biochemists, parasitologists, pathologists, pharmacologists, physiologists, radiologists, toxicologists, and virologists. Veterinarians supervise production, care, and utilization of laboratory animals. More than 600 veterinarians are engaged full time in public health work as federal, state, county, or city public health veterinarians and function in a variety of positions, such as directors of disease control programs, state epidemiologists, supervisors of programs of food and drug inspection and zoonosis control. Many boards of health require that a veterinarian be a member of the board.

From this list of activities, it is apparent that the interests and proficiencies of veterinarians encompass far more than medical care and treatment of animals. Certainly no one veterinarian has the knowledge to perform in all of these areas, but the profession as a whole does. Disaster plans that did not utilize these resources would be incomplete.

Total veterinarians in the United States	approx.	22,000
" " in general practice	"	10,500
" " in small animal practice	"	4,600
" " in public health	"	600
" " in preventive veterinary medicine	"	1,500
Other classifications and unknown	"	6,500.

V. The Role of Veterinarians Following Manmade Disasters

Preparations for the practice of disaster veterinary medicine should begin before the disaster. Each veterinarian should be informed of disaster plans that have been made for his community or area. These plans are made by the local Civil Defense organization, or, if there is none, by the local health department. In the event that there is no plan in effect, veterinarians and physicians should make a common plan, integrating the two professions. Detailed plans for disaster activities are in effect for veterinarians in the Defense Department and in U. S. Department of Agriculture field activities as well as in state and local government. It is planned that military veterinarians, where they are available, will assist in organizing civilian services in addition to their usual duties. Certain USDA and military veterinarians are trained in radiological techniques, and, along with other trained personnel, can provide guidance on radiological health matters. In addition, veterinarians will continue with animal disease control activities, which are especially important in biological warfare defense and post attack recovery efforts.

VI. The Role of Veterinarians Following the Disaster and the Immediate Post Disaster Period

The responsibilities of a veterinarian during any type of disaster are to take appropriate action to protect himself and his family and to join in emergency activities of the community. These activities may have little relationship to medicine, i. e., fighting fire, sandbagging a levee, or taking shelter, but are necessary for common preservation.

VII. The Role of Veterinarians Following the Shelter Period

When the disaster situation has progressed past the immediate disaster period, it will become necessary for the veterinarian to determine how he will be of the most service. This will require a judgment based on previous plans and training and on information available regarding the gravity of the health situation; numbers of sick and injured, available physicians, medical supplies, and transportation. If there is need for the veterinarian to assist in the management of human sick and injured, he should be prepared to do so. The extent of veterinary activities in disaster medical care will depend upon the situation, as stated under "Method of Approach to Study." Veterinary hospitals in suburban areas, where much of our population lives, must be exploited by maximum use of available medical supplies, equipment, and trained personnel in the treatment of human patients.

Present nuclear devices may be larger and may produce more radiation hazards than did World War II weapons. It is believed that the area where live casualties will be concentrated may be an area of hazardous fallout contamination. Fallout contamination will depend upon wind, type and size of weapon, and other factors. This contamination may persist at a high level for an unknown period of time, making it hazardous to enter disaster areas. It then follows that the sick and injured who can be aided will be those who have survived the blast and post-blast period of shelter occupancy, which may last for as long as two weeks.

Health factors influencing the survival of large numbers of people in shelters for undetermined lengths of time will include adequate medical guidance and care in the shelter environment. It is not anticipated that there will be a physician in every shelter to provide medical care but rather, that those persons who are best qualified in the shelter population will offer the best medical support they can.

All veterinarians who are in shelters should be prepared to provide medical guidance and care for the shelter population until it is determined that it is safe to leave the shelter. It is anticipated that shelter populations will continue to be

afflicted by all of the ills normally present in the population and that they will develop new ills as a result of crowding, environmental and psychological stresses. Medical care of this scope will require broader knowledge of the practice of medicine than that required in treating trauma and burn casualties in a hospital or aid station environment. Each veterinarian should have some knowledge of medicine to include infectious diseases, obstetrics, and psychiatry.

VIII. The Role of Veterinarians Following the Post Shelter Period

The basic functions of veterinary medicine are to ensure the health of animals and to guard the safety of food supplies. It is anticipated that, after a disaster, refrigeration and transportation facilities will be limited. In the absence of refrigeration, the best way to maintain stores of meat will be through the conservation of those animals that can be expected to survive. Careful sorting of injured animals and those exposed to radiation to determine if immediate slaughter is indicated will afford maximum utilization of surviving meat animals.

Radioactive fallout on foodstuffs, animal feeds, water, and animals will be a major problem in food salvage. It is unlikely that many veterinarians will be, or even need to be, proficient in the operation of radiation detecting equipment, as fallout will be monitored over a wide area and broad recommendations will be provided for the area regarding use of land, water, and animal feeds. If disorganization and lack of communication is such that information regarding radiation contamination cannot be obtained or disseminated, it is believed that there will be more pressing uses for veterinary skills than monitoring radioactivity. For example, in an emergency, meat and milk from an animal with a normal temperature and capable of walking can be consumed without causing acute radiation damage to man. It has been determined that fallout contamination of foods will probably have a minor immediate effect on population survival. Veterinarians should have sufficient knowledge to interpret the information available in radiation reports, to enable them to make practical use of such information. In addition, they should be familiar with

the pathogenesis of radiation injury and with decontamination procedures, in order to make sound judgments in these matters.

Because veterinary training places great emphasis on maintaining the health of the herd, veterinarians constitute a medical resource that can be utilized in epidemiological control of diseases in human populations in disaster situations. Crowding, contaminated food and water supplies, exposure and other stresses will increase the possibility of outbreaks of communicable diseases.

Displaced populations will require continued surveillance to detect early cases of communicable diseases; and, when such cases are found, prompt epidemiological investigation will be necessary to define and control or eliminate the sources of infection. Epidemiological investigations, done for the same purposes in animal populations, are part of the every-day practice of veterinary medicine.

Veterinarians should be prepared to determine and supervise practical field methods of sanitation, hygiene, and preventive medicine.

The burden of biological warfare defense is now shared by large animal practitioners, as part of the every-day work of protecting the health of our food-producing animals. The first warning of a BW attack against animals will probably be an increased incidence of a disease in an area. Our animal populations are susceptible to a number of potentially effective BW agents, among the most important of which are African swine fever, foot-and-mouth disease, and rinderpest. Primary defense consists of prompt diagnosis by the practitioner and prompt reporting of the suspected diagnosis to state or federal livestock disease control authorities. Veterinarians will advise appropriate health authorities whether BW agents used against animals will affect man, and will in turn be informed should an outbreak be diagnosed in humans first.

IX. Use of Ancillary Personnel

It has been conservatively estimated that there are two trained non-professional assistants for each veterinarian. These include lay meat inspectors, skilled help in animal hospitals, and military enlisted personnel assigned to veterinary units of the Army and Air Force. They have been trained in restricted areas of veterinary medicine, and, in emergency situations, can be expected to perform their usual duties, or similar activities, with little or no supervision. In the event of destruction of established slaughter facilities, field slaughter of livestock will be necessary. Slaughter supervision in these circumstances by trained lay meat inspectors will help to ensure that the product will be safe for human consumption.

Veterinary hospital assistants with training in first aid and medical self-help will be able to assist in the care of human sick and injured in an emergency. Veterinary technicians are now being trained, and it is expected that they will be able to assist in several capacities, under supervision, as the situation demands.

X. Recommendations for Training and Implementation

Prior to a disaster, each veterinarian should have increased his special talents and skills and have planned for their best utilization. It should be possible for each veterinarian to decide where his particular skills will be most useful and to acquire the additional training he will need. In all situations the most effective utilization of skills will depend on community leaders knowing those skills which are available and incorporating them in the local defense plan. Probably the best way to accomplish this will be through contact between the local veterinary society and the local civil defense unit, health department, and medical society.

Training for preparedness can be divided into two categories: general information of value to all veterinarians and other professional groups; examples are, weapon effects, biological effects of fallout, interpretation of radiation data reported

by AEC and other monitors, familiarization with the community disaster plan and roles of other professional groups in a disaster. The second training category will include training designed especially for veterinarians, based on their professional background and proposed utilization.

Refresher courses in the epidemiology of communicable diseases of man will enable veterinarians to better apply the knowledge they use daily in the practice of veterinary medicine to the epidemiology of communicable diseases in man. Veterinarians now receive information on diagnosis and treatment of animal diseases not present in the United States from the Department of Agriculture, the U. S. Livestock Sanitary Association, and other sources. This knowledge should be continuously strengthened by special training courses.

Short courses, taught by physicians, in emergency treatment of human sick and injured, with special emphasis on use of equipment such as X-ray and laboratory diagnostic aids, and of pharmaceuticals available in animal hospitals, emergency hospitals and shelters, must be emphasized if veterinarians are to assume any responsibility for human patient care.

Veterinarians in special professional categories will require other training to familiarize them with expanded or new roles that will enable them to be most productive.

Not all veterinarians will need, nor be interested in, the same training courses. Training offered to small animal specialists and training given to veterinarians in laboratory research, as examples, should be different and tailored toward increasing and broadening their special skills for application to disaster veterinary medicine.

Training in disaster veterinary medicine requires that decisions be made regarding what is to be taught and when it is to be taught. "What" has been discussed in a general manner. "When" can be divided into graduate and undergraduate periods. It is apparent that the best

time to give training to veterinarians is while they are enrolled in school. This will probably be accomplished by providing information regarding special problems during appropriate scheduled courses. An example of this would be teaching courses in physics and pathology as related to radiation injuries as parts of the regular courses in radiology, biochemistry, and pathology. The general concepts of disaster veterinary medicine could be discussed in the course in public health or in similar courses.

Post-graduate training will probably be more difficult to accomplish because of the difficulty in getting busy practitioners together; severe limitations in teaching time; general lack of interest in civil defense; competition with other training which has immediate clinical application; and economic, logistical, and personnel problems involved in establishing large numbers of small training courses of short duration. It has been suggested that training in disaster veterinary medicine be given in short courses at the schools of veterinary medicine, at state and regional veterinary meetings, local veterinary medical association meetings, at hospitals, and at health departments.

Training material can be presented in a variety of ways; however, it is recommended that summaries be published in standard size booklets, pamphlets, or papers punched to fit a loose-leaf binder, to facilitate retention and access to reference material.

Since the development of training programs is outside the scope of this report, it is recommended that a study be made to determine the most appropriate course material and effective methods of presenting training information to veterinarians. It is also recommended that program content be considered on the basis of needs and acceptability to the profession and to each professional specialty in order to maintain program interest and continued acceptance. In order to accomplish this, it will be desirable to have a veterinary consultant in the agency that will develop future training programs. It is recommended that all aspects of training and preparedness utilize the existing professional organizations.